

Marine Mammals

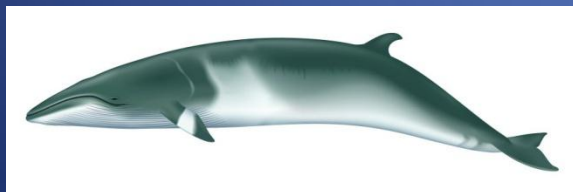


Wayne McFee
NOAA/NOS/CCEHBR
wayne.mcfee@noaa.gov

Marine Mammals in SC Waters

Mysticetes – 6 species

- Humpback whale*E
- Right whale*E
- Fin whale*E
- Bryde's whale*
- Sei Whale -E
- Minke whale



Marine Mammals in SC Waters

Odontocetes – 21 species

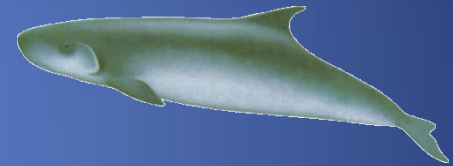
•Physeteridae

- Sperm whale* E



•Kogiidae

- Pygmy sperm whale*
- Dwarf sperm whale*



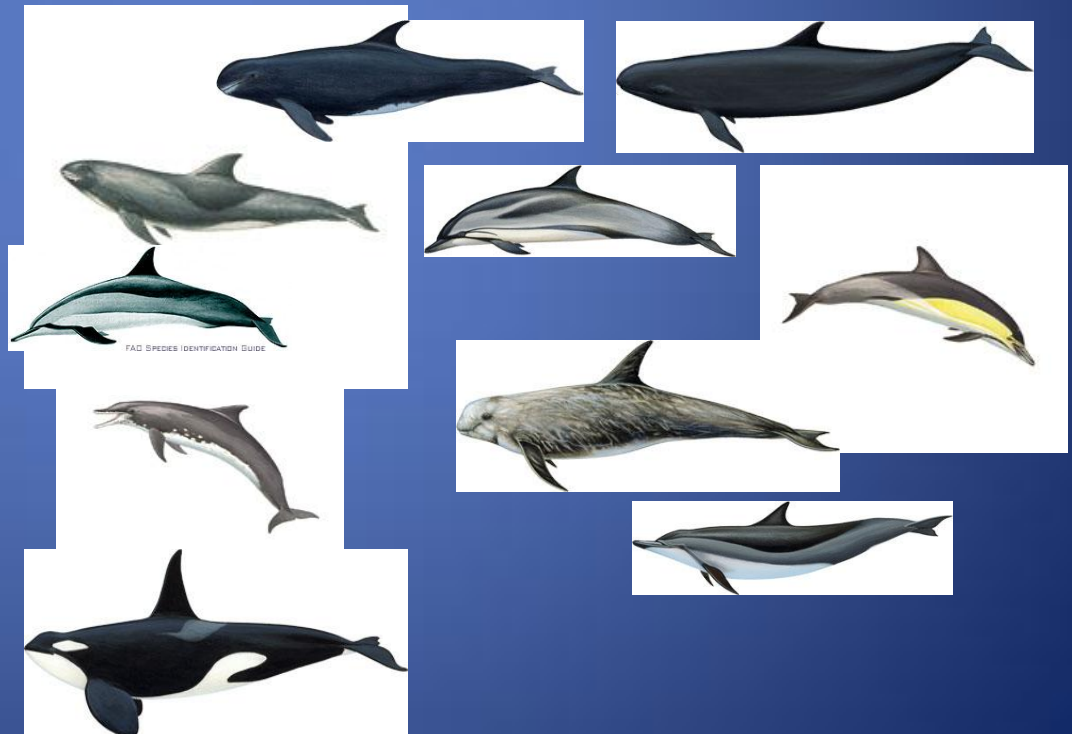
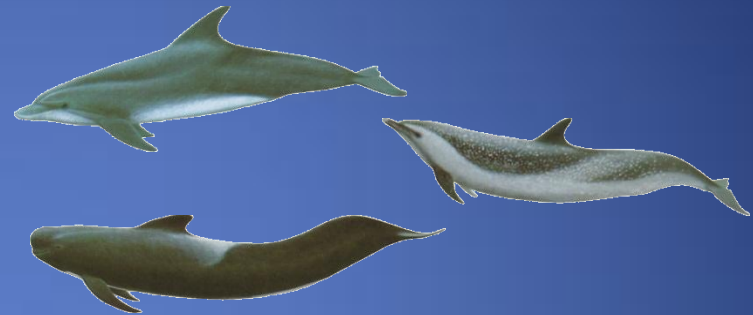
•Ziphiidae

- Cuvier's beaked whale*
- Blainville's beaked whale*
- Baird's beaked whale*
- True's beaked whale*



Marine Mammals in SC Waters

- Delphinidae
 - Bottlenose dolphin*T
 - Atlantic spotted dolphin*
 - Pantropical spotted dolphin*
 - Pilot whale*
 - Pygmy killer whale*
 - False killer whale*
 - Melon-headed whale*
 - Striped dolphin*
 - Spinner dolphin
 - Common dolphin
 - Rough-toothed dolphin
 - Risso's dolphin
 - Clymene dolphin
 - Killer whale



Marine Mammals in SC Waters

Phocids

- Harbor seal*



Sirenians

- Florida manatee*E



Navy AFAST Areas

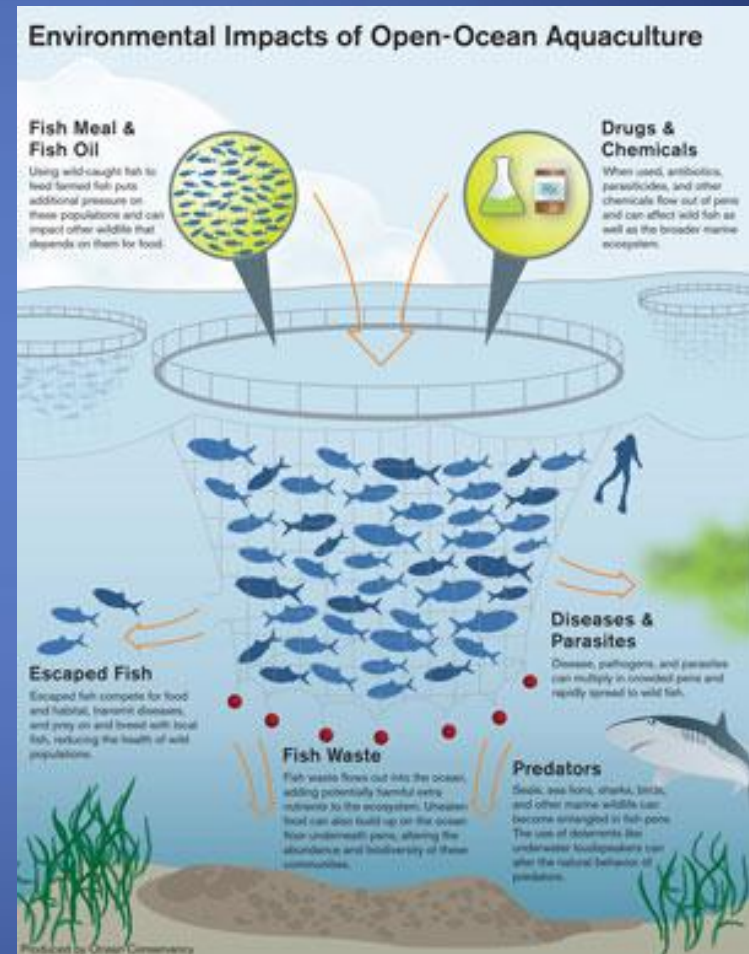
UNCLASSIFIED U.S. Fleet Forces Command Annual AFAST Range Exercise Report
FINAL DRAFT 1 October 2009



- Active sonar
- Barotrauma
- Right whales
- Elevated stranding response and protocols
- Last – October 8-29

Open Ocean Aquaculture

- Pharmaceuticals
- Disease transmission
- Entanglement
- Marine mammal deterrents



Coastal Aquaculture

- Habitat loss
- Decreased foraging
- Disruption of calving 'hot spots'
- Pharmaceuticals
- Disease transmission



Windfarms

- Disturbance
- Construction noise
- Underwater noise
- Boat traffic
- Helicopter traffic
- Migration disruption?
- Denmark harbor porpoise study 1996-2006
 - densities decreased during construction phase
 - recovery took 2 yrs.



Wave and Current Energy

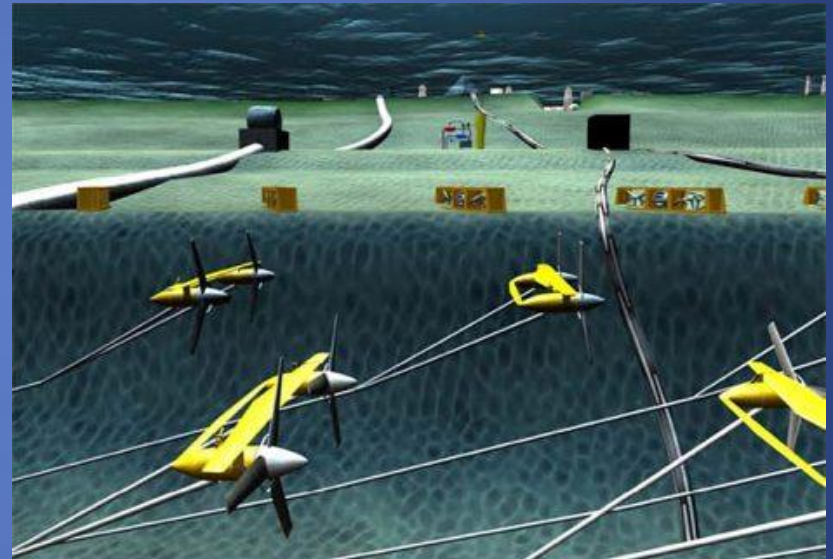
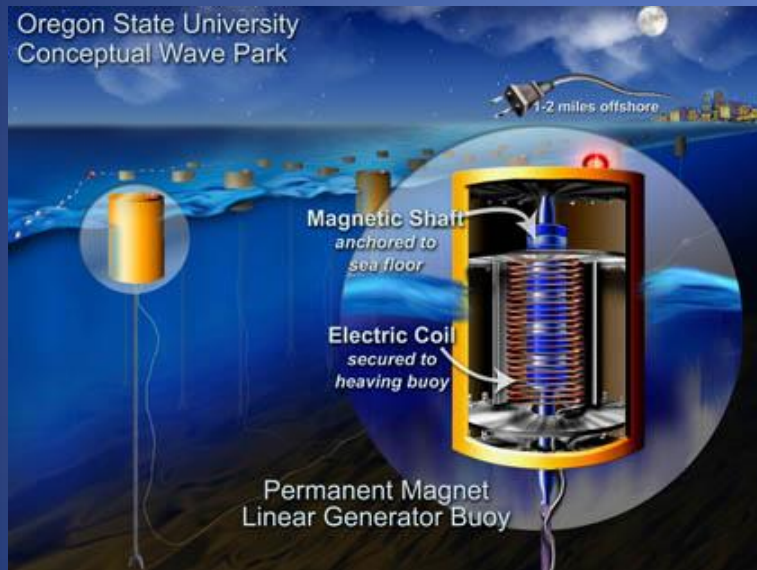


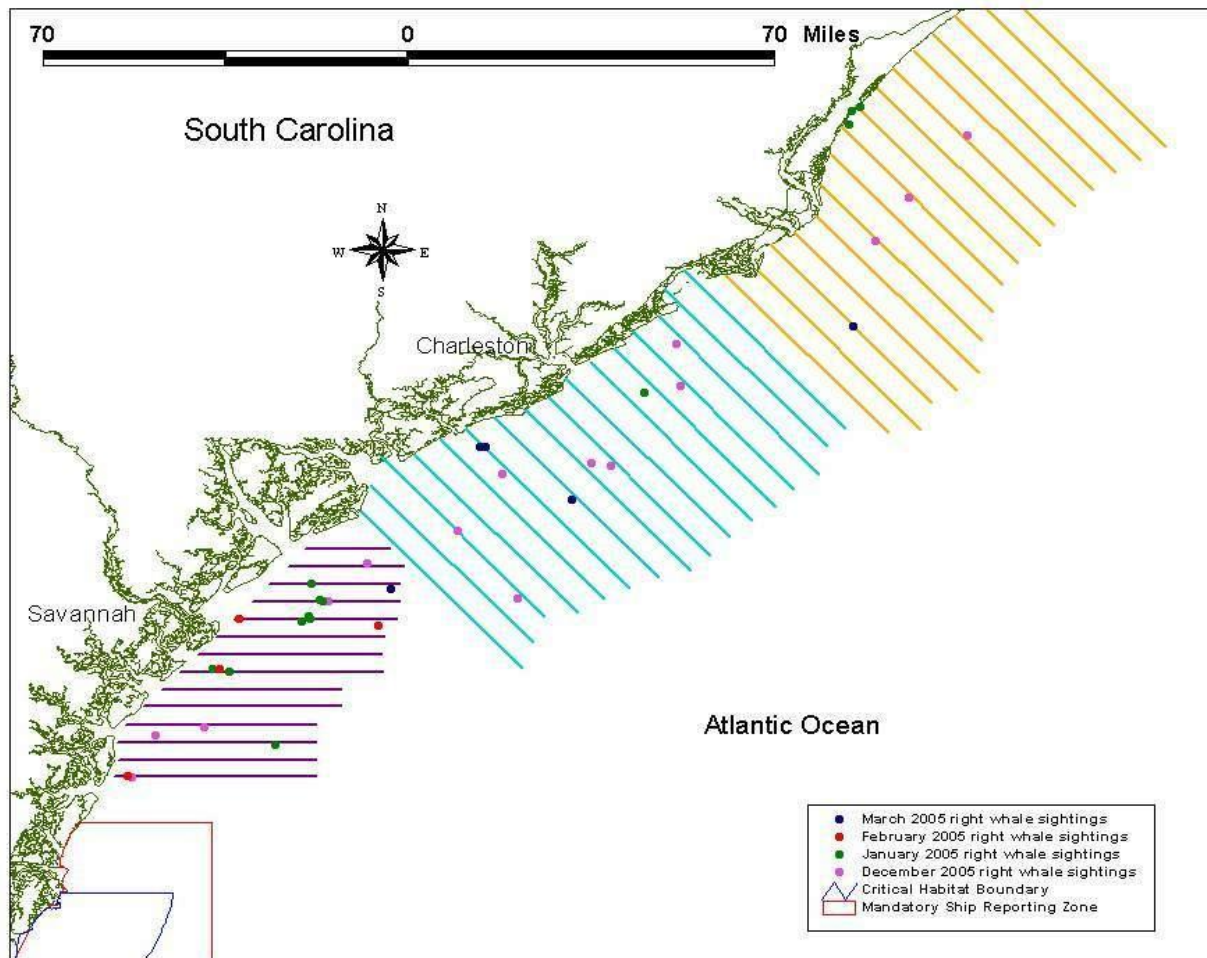
Image: treehugger.com

Cruise and Container Ships

- Increase noise
- Ballast?
- Disease
- Collision



Right Whale Aerial Survey Sightings



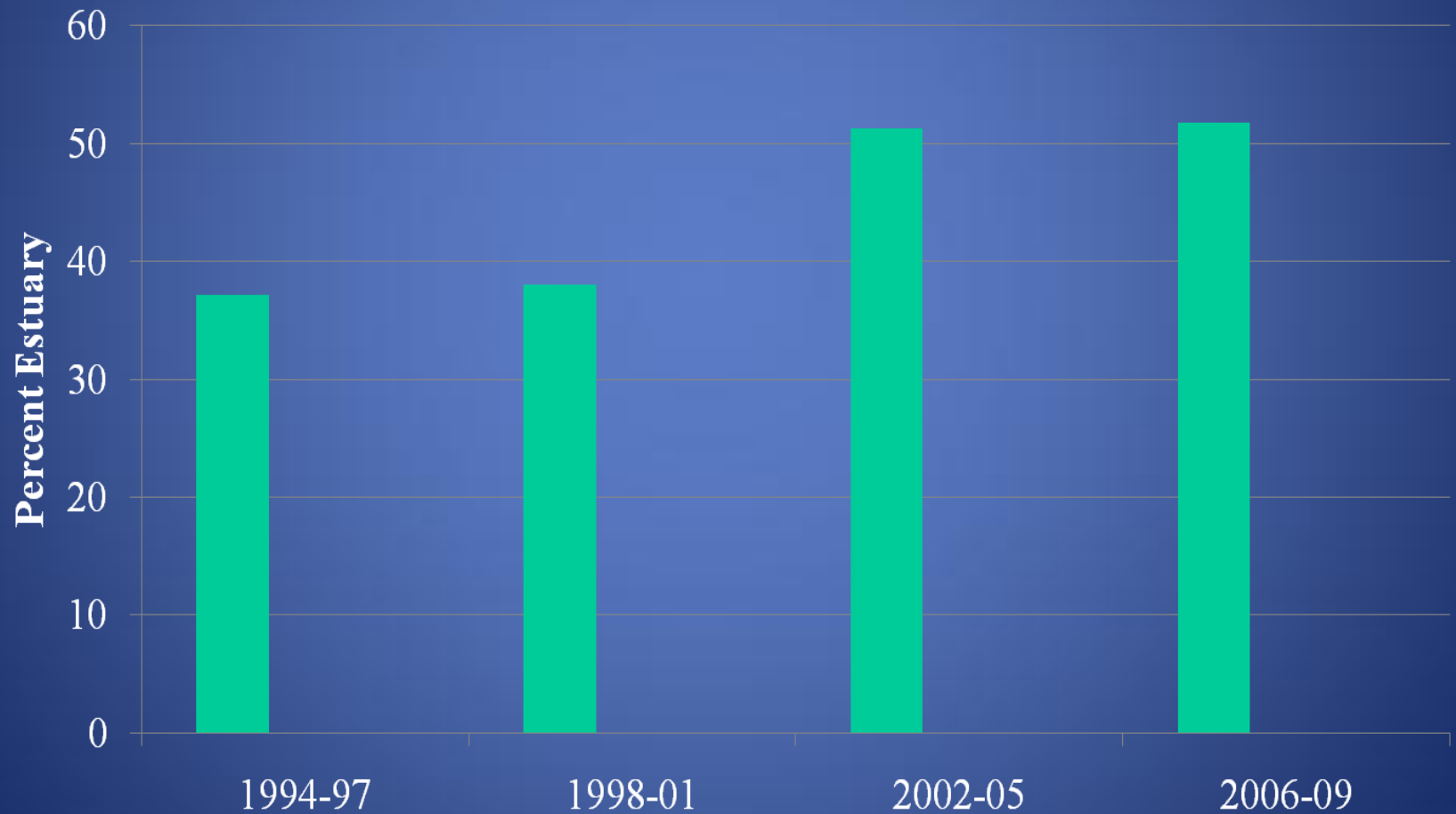
Noise

- Marine mammals very dependent on hearing for communication, finding prey, and echolocation
- Creates modifications to normal behavior
- Can cause displacement from preferred feeding or calving grounds
- Can cause masking of other sounds
- In general, can cause an improper interpretation of their environment
- Can lead to decreased viability
- Vulnerability to disease
- Can increase the cumulative effects of contaminants and stress of noise
- Washington Post: “Researchers find that beached dolphins are often deaf”
- Right whales are making louder noises seemingly to be heard

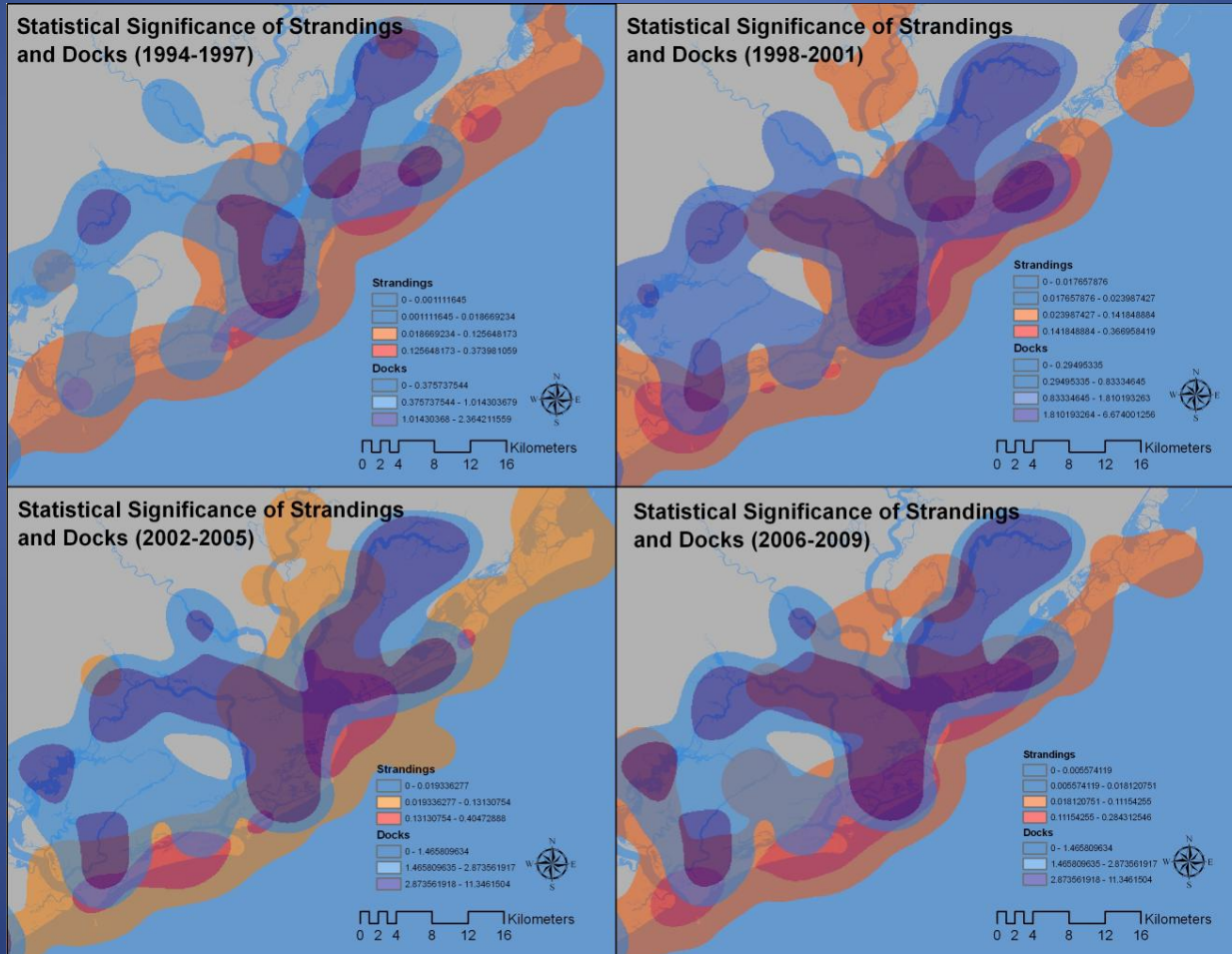
Coastal-Estuarine Development



Estuarine Strandings



Strandings and Dock Densities



Possible Coastal Development Outcomes

- We can project that increased human population densities in the estuaries will allow for more detectable strandings, increasing pressure on stranding personnel to respond
- We are likely to see shifts in habitat preference due to prey shifts and loss of habitat
- This could result in competition with humans for food resources as recreational fisheries (crab pot; hook/line [Wells et al 2008]) increase
- Increasing contaminant loads could affect growth and reproductive fecundity
- Increased boating could lead to more boat-related deaths and harassment

Ecotourism

- Harassment
- Illegal feeding
- Calving disturbance
- Propeller risk



Fisheries

- ~25% show signs of HI
- Entanglements
- Crab pot fishery a significant source of human-induced mortality (Burdett and McFee, 2004)
- Shrimp fishery?
- Depredation
- Competition for food resources



Marine Debris

- Entanglement
- Ingestion



A photograph of a whale's tail, or fluke, emerging from the surface of the ocean. The tail is dark and curved, with the word "Questions?" written in white, sans-serif font across its center. The water is a deep blue with gentle ripples. The tail is positioned in the middle of the frame, with its base just above the water line.

Questions?